

WE CLAIM:

1. A method of performing a medical procedure, comprising:  
5 stimulating a nerve to adjust beating of a heart to a first condition;  
delivering a first vasoactive substance to a site of the medical  
procedure while the beating of the heart is in the first condition;  
performing the medical procedure; and  
delivering a second vasoactive substance to the site while the  
10 beating of the heart is in the first condition.
2. The method of claim 1 further comprising:  
stimulating the heart to adjust beating of the heart to a second  
condition.  
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3. The method of claim 2, wherein the second condition is a condition  
in which the heart is beating, further comprising:  
delivering the second vasoactive substance to the site after the  
second condition is achieved.  
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4. The method of claim 1 wherein the first vasoactive substance is a  
vasodilator selected from the group consisting of:  
an organic nitrate, isosorbide mononitrate, a mononitrate,  
isosorbide dinitrate, a dinitrate, nitroglycerin, a trinitrate, minoxidil, sodium  
25 nitroprusside, hydralazine hydrochloride, nitric oxide, nicardipine hydrochloride,  
fenoldopam mesylate, diazoxide, enalaprilat, epoprostenol sodium, a  
prostaglandin, milrinone lactate, a bipyridine, a dopamine D1-like receptor  
agonist, a dopamine D1-like receptor stimulant, and a dopamine D1-like receptor  
activator.  
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5. The method of claim 1 wherein the second vasoactive substance is a vasoconstrictor selected from the group consisting of:

a sympathomimetic, methoxamine hydrochloride, epinephrine,  
5 midodrine hydrochloride, desglymidodrine, an alpha-receptor agonist, an alpha-receptor stimulant, and an alpha-receptor activator.

6. The method of claim 1 further comprising:

delivering a systemic drug during the medical procedure,

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7. The method of claim 6 wherein the systemic drug is selected from the group consisting of:

a beta-blocker, a cholinergic agent, a cholinesterase inhibitor, a calcium channel blocker, a sodium channel blocker, a potassium channel agent,  
15 adenosine, an adenosine receptor agonist, an adenosine deaminase inhibitor, dipyridamole, a monoamine oxidase inhibitor, digoxin, digitalis, lignocaine, a bradykinin agent, a serotonergic agonist, an antiarrhythmic agent, a cardiac glycoside, a local anesthetic, atropine, a calcium solution, an agent that promotes heart rate, an agent that promotes heart contractions, dopamine, a  
20 catecholamine, an inotrope glucagon, a hormone, forskolin, epinephrine, norepinephrine, thyroid hormone, a phosphodiesterase inhibitor, prostacyclin, prostaglandin and a methylxanthine.

8. The method of claim 1 wherein the medical procedure is selected from the group consisting of:

a fluoroscopic procedure, a cardiac procedure, a vascular  
5 procedure, a neurosurgical procedure, an electrophysiology procedure, an  
ablation procedure, an endovascular procedure, a pulmonary procedure, an  
aneurysm repair, an imaging procedure, a CAT scan procedure, a MRI  
procedure, a genetic therapy, a cellular therapy, a cancer therapy, a radiation  
therapy, a transplantation procedure, a coronary angioplasty procedure, a stent  
10 delivery procedure, an atherectomy procedure, a procedure that requires precise  
control of cardiac motion, a procedure that requires precise control of bleeding, a  
port-access procedure, an endoscopic procedure, a sternotomy procedure, a  
thoracotomy procedure and a robotic procedure.

15 9. The method of claim 1 further comprising:  
re-stimulating the nerve to re-adjust beating of the heart to the first  
condition; and  
continuing the medical procedure.

20 10. The method of claim 1 wherein the nerve is selected from the group  
consisting of:  
a vagal nerve, a carotid sinus nerve, a fat pad.

11. A method of performing a medical procedure on a vessel,  
comprising:
- 5 stimulating a nerve to adjust beating of a heart to a still condition;  
delivering a first vasoactive substance to the vessel;  
performing the medical procedure on the vessel while the heart is in  
a still condition and after delivery of the first vasoactive substance to the vessel;  
and;
- 10 delivering a second vasoactive substance to the vessel and  
reducing stimulation of the nerve to adjust beating of the heart to a beating  
condition after performing the medical procedure.
12. The method of claim 11 further comprising:  
stimulating the heart to achieve the beating condition.
- 15 13. The method of claim 11 further comprising:  
re-stimulating the nerve to re-adjust beating of the heart to the still  
condition; and  
continuing the medical procedure on the vessel.
- 20 14. The method of claim 11 wherein the nerve is selected from the  
group consisting of:  
a vagal nerve, a carotid sinus nerve, a fat pad.

15. The method of claim 11 wherein the first vasoactive substance is a vasodilator selected from the group consisting of:

an organic nitrate, isosorbide mononitrate, a mononitrate,  
5 isosorbide dinitrate, a dinitrate, nitroglycerin, a trinitrate, minoxidil, sodium  
nitroprusside, hydralazine hydrochloride, nitric oxide, nicardipine hydrochloride,  
fenoldopam mesylate, diazoxide, enalaprilat, epoprostenol sodium, a  
prostaglandin, milrinone lactate, a bipyridine, a dopamine D1-like receptor  
agonist, a dopamine D1-like receptor stimulant, and a dopamine D1-like receptor  
10 activator.

16. The method of claim 11 wherein the second vasoactive substance is a vasoconstrictor selected from the group consisting of:

a sympathomimetic, methoxamine hydrochloride, epinephrine,  
15 midodrine hydrochloride, desglymidodrine, an alpha-receptor agonist, an  
alpha-receptor stimulant, and an alpha-receptor activator.

17. A method of harvesting a vessel, comprising:

stimulating a nerve to adjust beating of a heart to a first condition;  
20 delivering a vasodilative substance to the heart while the heart is in  
the first condition;  
harvesting the vessel while the heart is in the first condition, and;  
delivering a vasoconstrictive substance to the heart and  
reducing stimulation of the nerve to adjust beating of the heart to a  
25 second condition after harvesting the vessel.

18. The method of claim 17, further comprising:

stimulating the heart to adjust beating of the heart to the second  
condition.  
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19. The method of claim 17 wherein the vasodilator is selected from the group consisting of:

an organic nitrate, isosorbide mononitrate, a mononitrate,  
5 isosorbide dinitrate, a dinitrate, nitroglycerin, a trinitrate, minoxidil, sodium  
nitroprusside, hydralazine hydrochloride, nitric oxide, nicardipine hydrochloride,  
fenoldopam mesylate, diazoxide, enalaprilat, epoprostenol sodium, a  
prostaglandin, milrinone lactate, a bipyridine, a dopamine D1-like receptor  
agonist, a dopamine D1-like receptor stimulant, and a dopamine D1-like receptor  
10 activator.

20. The method of claim 17 wherein the vasoconstrictor is selected from the group consisting of:

a sympathomimetic, methoxamine hydrochloride, epinephrine,  
15 midodrine hydrochloride, desglymidodrine, an alpha-receptor agonist, an alpha-  
receptor stimulant, and an alpha-receptor activator.